Executive summary

Title of the Project

The title of the project is the Moura Link - Aldoga Rail Project.

The proponent

QR Limited (QR) is the project proponent for the Project. Formed in 1865, QR is a government owned organisation and is subject to the provisions of the *Transport Infrastructure Act 1994* and the *Government Owned Corporations Act 1993.*

The contact details of the proponent are:

QR Limited
Level 8, 127 Creek Street
GPO Box 1429
BRISBANE QLD 4001

Telephone: + 61 7 3235 3707
Facsimile: + 61 7 3235 2560

Within Queensland, QR is the largest provider of rail transportation solutions for Australia's coal mining industry. QR operates 500 coal train services on average per week from over 30 coal mines. It rails coal to six existing coal terminals and domestically to power stations and mineral processing facilities. These services are operated on QR's 2,000 km of interconnected coal network track (75% electrified) and on the general freight and passenger networks.

QR aspires to a goal of zero harm to the natural environment and will seek to be proactive in developing means by which their business can grow in an environmentally sustainable manner. Continual and increased environmental awareness among staff is an ongoing commitment of QR.

Aims and objectives

The primary aims of the Moura Link - Aldoga Rail Project are to provide:

- New rail link (Moura Link) to carry Moura/Surat traffic arriving via the Moura Short Line from the southwest to the North Coast Line southeast of the Mount Larcom township that will connect with the proposed Wiggins Island Coal Terminal (WICT) rail loops and other rail tracks in the Gladstone region
- A rollingstock maintenance yard and provisioning facilities (Aldoga Rail Yard) in the northern area of the Gladstone State Development Area (GSDA)
- Quadruplication of the North Coast Line between the township of Mount Larcom and the proposed WICT rail infrastructure
- Additional tracks along the East End Mine Branch Line
- Provision for future tracks within the project area
- Provision of rail access for potential third party operators at Aldoga

The Project also includes investigating and identifying suitable construction accommodation village locations.

Legal framework

On 26 September 2007 the Coordinator-General (CG) declared the Project a 'significant project' pursuant to the *State Development and Public Works Organisation 1971* for which an Environmental Impact Statement (EIS) was required.

The CG issued the draft Terms of Reference (ToR) for the EIS for community and stakeholder feedback in January 2008. The final ToR was issued in March 2008.

This EIS provides an assessment of potential impacts (both positive and negative) on the environment as a result of the construction and operation of the Project.

The Project was determined "not a controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* on 7 December 2007.

This EIS has been prepared to facilitate public and agency review of the Project. It is intended to provide sufficient information to facilitate the following project approvals:

- EIS approval under the *State Development and Public Works Organisation Act 1971*
- Land use approval under the GSDA Development Scheme
- Development Permit for Material Change of Use for Construction and Operational Environmental Relevant Activities (ERAs)

Prior to construction commencing on the proposed rail infrastructure other development approvals will be obtained as required under State legislation.

Project background and need

Project background

To cater for increased and new coal tonnages from existing and new coal mines, QR is proposing a major expansion of its rail network in the region to the northwest of Gladstone. The Project, known as the Moura Link - Aldoga Rail Project (MLARP), will include the construction of a new rail corridor (Moura Link), new rollingstock maintenance and provisioning facility (Aldoga Rail Yard) and the expansion of the existing rail corridor (North Coast Line). Within this EIS the term "Project" refers to all rail and supporting infrastructure associated with the MLARP. These works will be developed in parallel to and service a number of facilities, including the proposed WICT, located at the Port of Gladstone.

The proposed project area is shown in Figure 1.

QR has examined a number of alternatives prior to adopting the proposed rail infrastructure. These initial studies identified that rail provisioning and rollingstock maintenance facilities should ideally be located in the vicinity of the WICT to provide the lowest cost option. This option was assessed in detail during the WICT EIS process.

During the WICT EIS process (consultation phase) there was community opposition to transporting coal to the WICT through existing and growing rural residential areas along the pre-existing Moura Short Line. The WICT Supplementary EIS proposed a corresponding reduction in the scope of the WICT rail works. The WICT rail works now include only rail loops to service the terminal and the quadruplication of the North Coast Line, in the section between the new rail loops and the north-western edge of the Mount Stowe State Forest (just east of Yarwun township).

The WICT Supplementary EIS also proposed:

- Relocation of rollingstock maintenance yard and provision facilities to the GSDA at Aldoga
- Construction of a new rail line from the Moura Short Line to connect to the western end of the proposed rollingstock maintenance yard

It was also decided to address the revised rail infrastructure project under a separate environmental impact assessment process.

The Gladstone Land, Port, Rail and Road Infrastructure Study (being undertaken at the same time as the WICT EIS) raised the possibility of providing a single rail provisioning and rollingstock maintenance facility south of the township of Mount Larcom to service the GSDA and existing and future developments within the Port of Gladstone.

With consideration to the outcomes of the WICT EIS and the land, port, rail and road infrastructure study, QR has revised the concept design to the rail infrastructure assessed in this EIS.

Need for the project

Overview

Demand for coal has increased considerably in the last decade due to its low cost and stable supply compared to other fossil fuels. This growth is expected to remain strong and has seen recent surges in global demand due to accelerated world economic growth. While the recent rate of global economic growth is not expected to be sustained over the long term, there is sufficient sustainable demand to trigger the development of a new coal terminal and supporting coal rail infrastructure in the Gladstone region.

Queensland's Bowen Basin produces high quality coking coal, pulverised coal injection coal and thermal coal that is exported to many nations, including Japan, Korea, Taiwan, China, India and Brazil. The region represents a significant economic driver for the State and national economy. Continuing improvements in mining techniques at existing coal mines, as well as the expansion of existing mines and the development of new mines in the area, is resulting in growing supply to meet increasing demand for coal to be exported through the Port of Gladstone.

Existing capacity constraints

The RG Tanna Coal Terminal and Barney Point Coal Terminal have limited development capacity in their rail receival and port facilities. Customer contracts have been established for the existing tonnage and for future tonnage to expand the facilities to the currently calculated maximum capacity. Any substantial additional export tonnage will require the establishment of a new terminal. Gladstone Ports Corporation has determined that the port has sufficient committed tonnages to initiate the proposed WICT Project.

The existing operations at Callemondah Rail Yard are close to capacity and cannot accommodate the proposed future train lengths. Any new significant increase in tonnage will require a new facility to be constructed.

The Project will provide coal trains access to the proposed WICT and future industries within the GSDA and the greater Gladstone area.

Costs and benefits of the project

The estimated cost to construct the Project (Stages 1 to 4) is approximately $1 billion to 2 billion.

The following benefits will be derived from the Project:

- Supporting rail infrastructure for the WICT Project, GSDA and other industries in the Gladstone region
- Progress to support the development and expansion of mines in the Surat Basin area and growth within the Blackwater and Moura rail systems
- Economic benefits during construction and operation

Alternatives to the Project

This section describes the alternatives to the proposed activity, including the "no action" alternative.

There are a limited number of options available to accommodate the rail links required to service the proposed WICT and to cater for the increase in rail traffic due to new and expanding coal mine developments in the southern Bowen Basin and the Surat Basin. The proposed WICT is pivotal to a number of new mine developments, mine expansions and major expansion of rail infrastructure in the Gladstone region, and conversely these projects are critical to the operation of the proposed WICT.

Alternative routes and railyard locations

QR has examined a number of alternative route options prior to adopting the scheme proposed. In particular, a number of rail options have been investigated for connecting the Moura Short Line and North Coast Line to the proposed WICT at Golding Point (north of the Calliope River).

These initial studies identified that rail provisioning and rollingstock maintenance facilities should be located in the vicinity of the proposed WICT to provide the lowest cost option. This option was assessed in detail during the WICT EIS.

However, during the WICT EIS there was significant community opposition to transporting coal to the proposed WICT through existing and growing rural residential areas along the pre-existing Moura Short Line. Furthermore, a land, port, rail and road infrastructure study (being undertaken at the same time as the WICT EIS) was identifying infrastructure corridors through the GSDA. This study together with the WICT Supplementary EIS raised the possibility of providing a rail provisioning and rollingstock maintenance facility south east of Mount Larcom township to service:

- The proposed WICT
- The GSDA precinct
- Existing and future port and industry developments in the Gladstone region

This option was developed further by QR and is now the proposed rail scheme presented in this EIS.

A summary of the alternatives identified, including the "no action" option, are given in table below.

Project alternatives summary

Option	Issue
Moura and Surat rail traffic to be directed along existing Moura Short Line and Blackwater rail traffic to be directed along existing North Coast Line with new rollingstock maintenance and provisioning facilities near the proposed WICT (the rail option examined within the WICT EIS).	• WICT EIS process led to this option not being considered further. • Strong community opposition to transporting coal to the proposed WICT along the Moura Short Line between Gladstone and Calliope (which is considered to be part of the greater Gladstone region). • Rollingstock maintenance and provisioning facilities located in area that was suited to the proposed WICT, but not for future port facilities.
Expand existing facilities at the existing Callemondah Rail Yard and develop additional rail infrastructure to service the proposed WICT.	• Existing Callemondah Rail Yard is not ideally located to service the proposed WICT. Existing track geometry and adjoining land uses constrain the yard from significant expansion. The length of the Callemondah Rail Yard is not sufficient to accommodate the proposed long coal train consists. • Existing Callemondah Rail Yard is already operating at or near capacity.

Option	Issue
No action	• The inability to transport coal by rail to the proposed WICT would have significant economic implications for Australia and Queensland. • Further, inaction to meet demands of the industry would inhibit future proposed investment in the coal industry. The transport of additional coal to the proposed WICT will provide additional export revenue for Australia, increased State revenue and additional employment opportunities.

Project description

The proposed rail infrastructure included in this Project comprises the works required to provide rail access to and from the proposed WICT and rail facilities in the Gladstone region from both the Blackwater and Moura/Surat systems, together with the support infrastructure. Supporting infrastructure is expected to include QR rail holding roads and rollingstock maintenance facilities, which is necessary for operational support of the increased rail traffic. The proposed rail infrastructure will also include a combination of electrified and non-electrified tracks.

The proposed rail infrastructure is shown in Figure 2 and discussed below.

Moura Link

The Moura Link involves the construction of a new rail link between the existing Moura Short Line, North Coast Line and the East End Mine Branch Line. This link will allow trains travelling to/from the Moura/Surat system to enter the proposed WICT unloading loops from the same direction as those travelling from the Blackwater system without travelling through the Gladstone and Calliope rural residential suburbs.

Multiple route options were initially investigated for the portion of the Moura Link to the south of the Bruce Highway crossing. During the preparation of this EIS, the Department of Natural Resources and Water (DNRW) was consulted. DNRW has a long term water supply option of construction of the Castle Hope Dam on the Calliope River at Castlehope (DNRW register) in its water resource planning.

Although this dam site has been ranked very low on the list of water supply options for the Gladstone area by the Gladstone Area Water Board, the Project concept design has considered the possibility that this dam may be constructed in the future.

An options study was undertaken to assess the advantages and disadvantages of a number of alignments for the Moura Link. The study confirmed two options for further consideration, including:

- The Moura Link Eastern Option – preferred alignment linking the Moura Short Line and North Coast Line
- The Moura Link Western Option – alternative alignment linking the Moura Short Line and North Coast Line

Both Moura Link alignment options have been addressed in this EIS.

Aldoga Rail Yard and additional North Coast Line tracks

The Aldoga Rail Yard will be constructed to the north of the North Coast Line adjacent to the East End Mine Branch Line junction. The scope of the railway infrastructure within the yard includes:

- New locomotive provisioning facilities for electric and non-electric rail traffic.
- New rollingstock maintenance facilities for wagons and locomotives. These facilities are required due to the scope of rail operations contemplated and the increased number of trains accessing the network to service the proposed WICT (both electric and non-electric) and other developments in the Gladstone region. It is therefore proposed to develop the locomotive maintenance facilities (for electric and non-electric locomotives) and wagon maintenance facilities together. The facilities will also include the necessary stabling and storage roads.
- Quadruplication of the North Coast Line between the township of Mount Larcom and the proposed WICT rail infrastructure.
- Other supporting road and rail infrastructure (eg internal road network).
- Provision for future tracks within the project area.
- Provision of rail access for potential third party operators at Aldoga.

Rail infrastructure may be delivered in stages in line with the increasing export and domestic demand and will be designed so that future port expansion and trade through the port is not precluded. In terms of its holding capacity, the Aldoga Rail Yard will be designed to cater for the ultimate capacity to service rail traffic in the Aldoga and Gladstone areas, as well as to provide capacity relief to the Callemondah Rail Yard.

Environmental Impact Study

The EIS describes the existing environment (physical, biological and socio-economic) which may be impacted (both beneficial and adverse) by the Project. Specialist environmental studies were undertaken to ensure that the potential impacts, construction and operation, are clearly identified to assess the effectiveness of any proposed mitigation measures. The studies undertaken included:

Engineering studies

- Concept engineering and master planning
- Geotechnical investigations
- Flood modelling
- Rail traffic modelling

Environmental studies

- Baseline terrestrial flora and fauna monitoring
- Water quality monitoring (surface and groundwater)
- General soils investigation
- Groundwater sampling
- Indigenous and non-indigenous cultural heritage investigations
- Air quality assessment and modelling
- Noise assessment and modelling
- Town planning assessment
- Traffic impact assessment
- Social impact assessment
- Visual impact assessment

Aspects of the Project which are likely to cause environmental harm and/or social impacts will, in a number of instances, be able to be managed to ensure that no acceptable impacts occur. The avenue for linking the impact assessment process to the management of these impacts occurred through the development of an Environmental Management Plan.

Conclusion

The Project is consistent with the intent of the GSDA and will have significant economic benefits for the local, State and National economies.

The EIS concludes that the proposed Project is expected to have an impact on the existing environment within and adjoining the project area through ecological and social aspects. Project commitments have been identified and will be implemented to address the key findings of the EIS (refer Section 21).

The EIS also concludes that the potential for adverse impacts during construction and operation will be mitigated through the implementation of appropriate safeguards and management measures. Best practice environmental management will be adopted and implemented throughout the Project for all environmental aspects.

In summary, the Project can be constructed and operate in a manner that meets all relevant statutory requirements and criteria, environmental objectives and considerations, and reasonable stakeholder expectations.